

WHAT IS CLAIMED IS:

1. A tank truck for collecting and transporting flowable material, comprising:
  - a tank for receiving and storing the flowable material;
  - a suction hose connected to the tank, at least a portion of the suction hose extending into the tank; and
    - a drive assembly engageable with the suction hose for drawing the suction hose into and out of the tank, thereby varying the length of the suction hose outside the tank.
2. A tank truck for collecting and transporting flowable material, comprising:
  - a tank for receiving and storing the flowable material;
  - a boom mounted on the truck;
  - a suction hose connected to the tank and supported by the boom, at least a portion of the suction hose also extending into the tank; and
    - a drive assembly engageable with the suction hose for drawing the suction hose into and out of the tank, thereby varying the length of the suction hose outside the tank.
3. A tank truck for collecting and transporting flowable material, comprising:
  - a tank for receiving and storing the flowable material;
  - a boom mounted on the truck and including a boom tube;
  - a suction hose connected to the tank and extending through the boom tube, at least a portion of the suction hose also extending into the tank; and

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)

a drive assembly engageable with the suction hose for drawing the suction hose into and out of the tank, thereby varying the length of the suction hose outside the tank.

4. A tank truck for collecting and transporting flowable material, comprising:
  - a tank for receiving and storing the flowable material;
  - a boom mounted on the truck and having an adjustable length;
  - a suction hose connected to the tank and supported by the boom, at least a portion of the suction hose also extending into the tank;
    - whereby the suction hose is drawn and out of the tank to vary the length of the suction hose outside the tank by adjusting the length of the boom.
5. The tank truck recited in any one of claims 2 or 3, wherein the drive assembly is mounted on the boom.
6. The tank truck recited in claim 5, wherein the drive assembly comprises at least two rollers engageable with spaced exterior peripheral portions of the suction hose, at least one of the rollers being drivable.
7. The tank truck recited in claim 6, wherein the at least two rollers are engageable with opposite exterior sides of the suction hose.
8. The tank truck recited in claim 6, including four rollers engageable with equally spaced exterior peripheral portions of the suction hose.
9. The tank truck recited in claim 5, wherein the drive assembly comprises a drivable endless belt engageable with an exterior peripheral portion of the suction hose, and means for retaining the suction hose in frictional contact with the endless belt.

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)

10. The tank truck recited in claim 9, wherein the means for retaining the suction hose in frictional contact with the endless belt comprises at least one spring biased roller engageable with the suction hose opposite the endless belt.
11. The tank truck recited in claim 9, wherein drivable endless belt is supported in an arcuate path to be engageable with an bent portion of the suction hose.
12. The tank truck recited in claim 11, wherein the means for retaining the suction hose in frictional contact with the endless belt comprises at least one roller engageable with the suction hose opposite the endless belt.
13. The tank truck recited in claim 5, wherein the suction hose has external, helical corrugations, and wherein the drive assembly comprises a plurality of orbital wheels engageable with the helical corrugations, and means for driving the orbital wheels to advance or retract the suction hose.
14. The tank truck recited in claim 13 including an annular carriage for supporting the orbital wheels, and a drive motor for rotating the annular carriage.
15. The tank truck recited in claim 14 including an annular gear secured to the annular carriage, and a pinion gear in mesh with the annular gear and driven by the motor.
16. The tank truck recited in claim 2, wherein the drive assembly comprises a drivable endless belt within the boom tube and engageable with an exterior peripheral portion of the suction hose, and means also located within the boom tube for retaining the suction hose in frictional contact with the endless belt.
17. The tank truck recited in any one of claims 1-4 further comprising an extendable nozzle assembly on an end of the suction hose outside the tank.

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)

18. The tank truck recited in claim 17, wherein the extendable nozzle assembly includes a nozzle tube, and means for adjusting length of the nozzle tube relative to the end of the suction hose.
19. The tank truck recited in claim 18, wherein the exterior of the nozzle tube is threaded, and the means for adjusting length of the nozzle tube relative to the end of the suction hose includes a manually rotatable block threaded onto the nozzle tube.
20. The tank truck recited in claim 18, wherein the means for adjusting length of the nozzle tube relative to the end of the suction hose comprises a pair of manually retractable clamping blocks for retaining the nozzle tube in an extended position.
21. The tank truck recited in claim 18, wherein the nozzle tube is threaded on the outside of a threaded interior tube, and the means for adjusting length of the nozzle tube relative to the end of the suction hose includes a manually rotatable hand wheel connected by depending struts to the nozzle tube.
22. A tank truck for collecting and transporting flowable material, comprising:
- a tank for receiving and storing the flowable material;
  - a boom mounted on the truck and having a distal end;
  - a suction hose supported from the boom, the suction hose being extendable from the distal end of the boom and retractable toward the tank;
  - a drive assembly mounted on the boom and engageable with the suction hose for extending the suction hose past the distal end of the boom and

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)

retracting the suction hose toward the tank, thereby varying the length of the suction hose extended beyond the distal end of the boom; and

a suction hose guide beyond the distal end of the boom, the suction hose guide including a strut having an end projecting beyond the distal end of the boom, a freely pivotal arm on the projecting end of the strut, and a pair of guide rollers mounted on the freely pivotal arm.

23. The tank truck of claim 22, wherein one of the guide rollers is mounted on each of opposite ends of the freely pivotal arm.

24. The tank truck of claim 23, wherein the freely pivotal arm is pivoted at a point between the opposite ends thereof.

25. A tank truck for collecting and transporting flowable material, comprising:

a tank for receiving and storing the flowable material;

a boom mounted on the truck and having a distal end;

a suction hose supported from the boom, the suction hose being extendable from the distal end of the boom and retractable toward the tank; and

a drive assembly mounted on the boom and engageable with the suction hose for extending the suction hose past the distal end of the boom and retracting the suction hose toward the tank, thereby varying the length of the suction hose extended beyond the distal end of the boom, the drive assembly comprising adjustably inflatable pneumatic tires positioned about the suction hose, and means for driving the tires in rotation to extend or retract the suction hose.

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)

suction hose extended beyond the distal end of the boom, the drive assembly comprising adjustably inflatable pneumatic tires positioned about the suction hose, and means for driving the tires in rotation to extend or retract the suction hose.

26. The tank truck of claim 25, wherein the drive assembly comprises three inflatable pneumatic tires positioned symmetrically about the suction hose, one of the three tires being located on top of the suction hose.

27. The tank truck of claim 26, wherein the one of the three tires located on top of the suction hose is positioned rearwardly of the other two of the three tires.

28. The tank truck of claim 27, including an idling support tire located under the tire and forwardly of the other two of the three tires.

29. The tank truck of claim 26, wherein a normal friction force of the tires against the suction hose is adjustable by inflation pressure of the tires.

30. The tank truck of claim 26, including spring means for developing a normal friction force of the tires against the suction hose

31. The tank truck of claim 9, wherein the drivable endless belt is supported by a plurality of rollers supported in an arcuate path, and including means for driving the rollers located at opposite ends of the arcuate path.

32. The tank truck of claim 31, wherein each of the plurality of rollers is of concave axial configuration and the endless belt is flexible to conform to the configuration of the rollers.

33. The tank truck of claim 31; wherein the drive assembly is supported on a telescopic extension of the boom.

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)